

This listing of claims presented below replaces all prior versions and listings of claims in the application.

Listing of Claims

Claims 1-25 (cancel)

Claim 26 (Currently Amended) A method of producing a transgenic strawberry plant comprising inoculation of tissue of a strawberry plants, comprising treating the tissue of a plant with Agrobacterium thumefaciens which comprises at least one vector comprising into whose composition there enters at least one gene of interest wherein the method in the step of transformation a stagewise co-cultivation of explants is used which and producing explants comprises the steps of:

- a) cutting leaves into individual leaf disks for preparing explants;
- b) cutting one or more narrow strips having a width not exceeding 2 mm from the leaf disks for the inoculation of the leaf disks;
- c) inoculating and co-cultivating the leaf disk obtained in step b) with the bacterial suspension and subsequently removing excess bacteria and incubating the leaf disk at 25-28⁰C in darkness;
- d) forming first-stage explants having a width from 1 to 3 mm from the side of the first section of leaf disks by step b) incubating in darkness first-stage explants in a 23-25⁰C and the leaf disks in a 25-28⁰C and
- e) forming from 2 to 5 next-stages explants having a width from 1 to 3 mm with a periodicity of 1 to 5 days by independent steps.
 - i) selecting one or more leaf discs;
 - ii) separating a segment from each disk, for access of the agrobacteria;
 - iii) inoculating the leaf disks with the agrobacteria followed by removing excess agrobacteria;
 - iv) separating a number of explants, into which the disc inoculated with agrobacteria is separated; followed by separating 2 to 5 explants; in each step after separating an explant, the remaining portion of the disc is preincubated for 1 to 5 days to provide for inoculating the remaining portion with agrobacteria;
 - v) preparing lots of explants after each step of separating explants, the lots are transferred onto the

~~selection and regeneration media comprising from 1 to 10 mg TDZ, from 0 to 0.3 mg IBA, and from 10 to 100 mg kamaycin; from the prepared lots, explants, with a lowered frequency of necrotic reactions are selected and one or more transgenic plants are formed.~~

Claim 27 (Previously Presented) The method according to claim 26, wherein the vector contains genetic material that codes for at least one target protein.

Claim 28 (Previously Presented) The method according to claim 26, wherein the vector contains genetic material that codes for at least one protein which contributes to lowering necrosis in the step of transformation.

Claim 29 (Previously Presented) The method according to claim 26, wherein the vector contains genetic material that codes for at least one protein which enhances plant resistance to phytopathogens and which is selected from the group consisting of PR-1, PR-2, PR-3, PR-4, and PR-5.

Claim 30 (Previously Presented) The method according to claim 26, wherein the vector contains genetic material that codes for a combination of proteins according to claims 27, 28 or 29.

Claim 31 (Previously Presented) The method according to claim 29 wherein the vector contains genetic material that codes for thaumatin, belonging to PR-5.

Claim 32 (Previously Presented) The method according to claim 29, wherein genetic material codes resistance to fungi selected from the group consisting of Phytophthora fragariae, Verticillium alboatrrum, Mycosphaerella fragariae, Diplocarpon earliana, Dendrophoma obscurans, Botrytis cinerea, and Sphaerotheca humuli.

Claim 33 (Cancel)

Claim 34 (Cancel)

Claim 35 (Previously Presented) The method according to claim 26, wherein the strawberry plant is selected from the group of varieties: Selektta, Chambly, Chandler, Oka, Yamaska, L'Acadie, L'Authentique Orleans, Rosalyne, Roseberry, Saint-Pierre, Donna, Enzed Levin, Enzed Lincoln, Vilanova, Durval, Redcrest, Bountiful, Redgem, Pelican, Primetime, Mohawk, Latestar, Winoma, and Feyerwerk.

Claim 36 (Cancel)

Claim 37 (Cancel)

Claim 38 (Cancel)

Claim 39 (Cancel)

Claim 40 (Cancel)

Claim 41 (Previously Presented) The method according to claim 26, wherein the composition of the selection medium and of the regeneration medium includes TDZ, IBA and kanamycin.

Claim 42 (Cancel)

Claim 43 (Previously Presented) The method according to claim 26, wherein the concentration of TDZ is 5 mg//l.

Claim 44 (Cancel)

Claim 45 (Previously Presented) The method according to claim 26, wherein the concentration of IBA is 0.3 mg//l.

Claim 46 (Cancel)

Claim 47 (Previously Presented) The method according to claim 26, wherein the concentration of kanamycin is 50 mg//l.

Claim 48 (Previously Presented) The method according to claim 26, wherein the ratio of the section length and the explant surface area is from 0.1 mm/mm² to 2 mm/mm².

Claim 49 (Previously Presented) The method according to claim 26, wherein the ratio of the section length and the explant surface area is 0.5 mm/mm².

Claim 50 (New) A method for producing a transgenic strawberry, comprising treating a tissue of a strawberry plant with *Agrobacterium tumefaciens* which comprises at least one vector comprising at least one gene of interest wherein the method comprises the steps of:

- a) cutting leaves into individual leaf disks for preparing explants;
- b) cutting one or more narrow strips having a width not exceeding 2 mm from the leaf disks for the inoculation of the leaf disks;
- c) inoculating and co-cultivating the leaf disk obtained in step b) with the bacterial suspension and subsequently removing excess bacteria;
- d) forming first-stage explants having a width from 1 to 3 mm from the side of the first section of leaf disks by step b);
- e) forming from 2 to 5 next-stage explants having a width from 1 to 3 mm with a periodicity of 1 to 5 days by independent steps; and
- f) transferring the explants onto selection and regeneration medium comprising from 1 to 10 mg/ml TDZ, from 0 to 2 mg/l IBA and from 10 to 100 mg/l kanamycin.

Claim 51 (New) A method of producing a transgenic strawberry, comprising treating the tissue of a strawberry plant with *Agrobacterium tumefaciens* which comprises at least one vector comprising at least one gene of interest, wherein the method

comprises the steps of:

- (i) selecting at least one leaf disk from said strawberry plant;
- (ii) separating a segment from the disk to allow bacteria access;
- (iii) inoculating the leaf disk with agrobacteria and subsequently removing excess agrobacteria;
- (iv) excising explant from the inoculated disk and wherein the remainder of the inoculated disk is inoculated for 1 to 5 days to allow subsequent inoculation with agrobacteria before excising 2 to 5 further explants;
- (v) transferring the explant excised in step (iv) onto selection and regeneration media comprising from 1 to 10 mg TDZ, from 0 - 0.3mg IBA, and from 10 to 100 mg kanamycin;
- (vi) selecting prepared explants that have a lowered frequency of necrotic reactions; and
- (vii) allowing the selected explants to develop into transgenic strawberry plants.